

## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A computer-implemented method for analyzing a virtual function, said method comprising:

locating a virtual table for a virtual function, said virtual table comprising a start address for said virtual function;

creating an instruction for said virtual function, said instruction comprising a control transfer function that directs execution to instrumentation code;

rewriting said virtual table with a modified virtual table comprising an address for said instruction instead of said start address;

loading said address for said instruction upon determining that a call to said virtual function is a virtual function call, thereby directing execution to said instrumentation code; and

executing said instrumentation code to perform an instrumentation task for said virtual function.

2-4. (Canceled).

5. (Previously Presented) The computer-implemented method for analyzing a virtual function as recited in Claim 1 further comprising:

performing a desired instrumentation task; and

resuming execution at said start address previously contained in said virtual table.

6. (Previously Presented) The computer-implemented method for analyzing a virtual function as recited in Claim 1 further comprising:

overwriting said instrumentation code with instrumentation code which performs a desired instrumentation task; and

providing an instruction at the end of said instrumentation code

wherein said instruction points back to said start address previously contained in said virtual table.

7. (Original) The computer-implemented method for analyzing a virtual function as recited in Claim 1 further comprising:

determining from which location said virtual function has been called.

8. (Previously Presented) The computer-implemented method for analyzing a virtual function as recited in Claim 1 further comprising:

maintaining a mapping between said start address for said virtual function and said address for said instruction.

9. (Currently Amended) A computer-readable medium embodying instructions that cause a computer to perform a method for analyzing a virtual function, said method comprising:

locating a virtual table for a virtual function, said virtual table comprising a start address for said virtual function;

creating an instruction for said virtual function, said instruction comprising a control transfer function that directs execution to instrumentation code;

rewriting said virtual table with a modified virtual table comprising an address for said instruction instead of said start address;

loading said address for said instruction upon determining that a call to said virtual function is a virtual function call, thereby directing execution to said instrumentation code; and

executing said instrumentation code to perform an instrumentation task for said virtual function.

10-12. (Canceled).

13. (Previously Presented) The computer-readable medium of Claim 9 further comprising instructions that cause said computer to perform said method further comprising:

performing a desired instrumentation task; and

resuming execution at said start address previously contained in said virtual table.

14. (Previously Presented) The computer-readable medium of Claim 9 further comprising instructions that cause said computer to perform said method further comprising:

overwriting said instrumentation code with instrumentation code which performs a desired instrumentation task; and

providing an instruction at the end of said instrumentation code wherein said instruction points back to said start address previously contained in said virtual table.

15. (Previously Presented) The computer-readable medium of Claim 9 further comprising instructions that cause said computer to perform said method further comprising:

determining from which location said virtual function has been called.

16. (Previously Presented) The computer-readable medium of Claim 9 further comprising instructions that cause said computer to perform said method further comprising:

maintaining a mapping between said start address for said virtual function and said address for said instruction.

17. (Currently Amended) An apparatus for analyzing a virtual function, said apparatus comprising:

means for locating a virtual table for a virtual function, said virtual table comprising a start address for said virtual function;

means for creating an instruction for said virtual function, said instruction comprising a control transfer function that directs execution to instrumentation code;

means for rewriting said virtual table with a modified virtual table comprising an address for said instruction instead of said start address;

means for loading said address for said instruction upon determining that a call to said virtual function is a virtual function call, thereby directing execution to said instrumentation code; and

means for executing said instrumentation code to perform an instrumentation task for said virtual function.

18-20. (Canceled).

21. (Previously Presented) The apparatus of Claim 17 for analyzing a virtual function, said apparatus further comprising:

means for performing a desired instrumentation task by said instrumentor; and

means for resuming execution by said instrumentor at said start address previously contained in said virtual table.

22. (Previously Presented) The apparatus of Claim 17 for analyzing a virtual function, said apparatus further comprising:

means for overwriting said instrumentation code with instrumentation code which performs a desired instrumentation task; and

means for providing an instruction at the end of said instrumentation code wherein said instruction points back to said start address previously contained in said virtual table.

23. (Original) The apparatus of Claim 17 for analyzing a virtual function, said apparatus further comprising:

means for determining from which location said virtual function has been called.

24. (Previously Presented) The apparatus of Claim 17 for analyzing a virtual function, said apparatus further comprising:

means for maintaining a mapping between said start address for said virtual function and said new address for said virtual function.

25. (New) The computer-implemented method for analyzing a virtual function as recited in Claim 1 wherein said instruction contains only a single breakpoint instruction.